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B.Tech.
PCBT4204

4th Semester Back Examination 2017-18

MOLECULAR BIOLOGY

BRANCH : BIOTECH

Time : 3 Hours

Max Marks : 70

Q.CODE : C1136

Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Answer all parts of a question at a place.

- Q1 Answer the following questions :** (2 x 10)
- a) Define okazaki fragments?
 - b) Difference between polycistern and polyribosome.
 - c) How protein disulphaideisomerase helps in post translation modification?
 - d) What do you mean by selfish DNA?
 - e) Define 'Tm' of DNA. Calculate the 'Tm' of a 15-mer primer containing 40% GC content.
 - f) What is the role of Sugar pucker in DNA structure?
 - g) Name any four proteins involved in the DNA replication in eukaryotes.
 - h) How Arabinose Operon is different from other operones?
 - i) Which of the following is correct
 - (a) G-C base pair is more stable than A-T base pair
 - (b) A-T base pair is more stable than G-C
 - (c) Both are equally stable
 - (d) Base pair stability depends on DNA conformation
 - j) Distinguish between 'σ' and 'θ' model of DNA Replication.
- Q2** a) Write notes on Structural Polymorphism in DNA? How will you convert B-DNA into other DNA forms. (5)
b) Elucidate different Post transcriptional modifications (5)
- Q3** a) Briefly describe the process of regulation of gene expression in Lac Operon? (5)
b) Briefly explain Capping and poly (A) tailing ? (5)
- Q4** a) With neat diagrams explain the various types of RNA. (5)
b) Describe the process of Gene Silencing. (5)
- Q5** a) Write an essay on the deciphering of Genetic Code and their characteristics (5)
b) Elucidate different types of Transposons. (5)
- Q6** a) Explain Wobble pairing and its significance. (5)
b) What is initiation complex of translation? How it is formed? (5)
- Q7** Describe the process of transcription in detail. (10)
- Q8 Write short answer on any TWO :** (5 x 2)
- a) Enzymology of DNA replication
 - b) Gene structure in prokaryotes and eukaryotes,
 - c) Recombinant DNA technology.
 - d) Phylogenetic trees